CLAIMS:

1. A bone screw having a lead portion and a tail portion, each comprising a root and a thread (having a thread lead) formed on the root, the thread on each of the lead and tail portions having an approximately constant diameter along a significant portion of its length, in which the diameter of the thread on the tail portion is greater than that of the thread on the lead portion, and in which the thread lead of the thread on the lead portion is equal to the thread lead of the thread on the tail portion.

2. A bone screw as claimed in claim 1, in which the thread on the lead portion of the screw is a multi-start thread.

3. A bone screw as claimed in claim 2, in which the number of starts of the thread on the lead portion is equal to the ratio of the thread pitch of the thread on the tail portion to the thread pitch of the thread on the lead portion.

4. A bone screw as claimed in claim 2, in which the thread on the lead portion of the screw is a double-start thread and the thread on the tail portion of the screw is a single-start thread, and in which the thread pitch of the thread on the tail portion is equal to twice the thread pitch of the thread on the lead portion.

5. A bone screw as claimed in claim 2, in which the thread on the tail portion of the screw is a continuation of one of the threads on the lead portion.

6. A bone screw as claimed in claim 1, in which the ratio of the diameter of the thread on the tail portion to that of the diameter of the thread on the lead portion is at least about 1.2, preferably at least about 1.5.

7. A bone screw as claimed in claim 1, in which the ratio of the diameter of the thread on the tail portion to the diameter of the thread on the lead portion is not more than about 2.3, preferably not more than about 2.0.

8. A bone screw as claimed in claim 1, in which the diameter of the root of the tail portion is greater than the diameter of the root of the lead portion.

9. A bone screw as claimed in claim 8, in which the ratio of the diameter of the root of the tail portion to the diameter of the root of the lead portion is at least about 1.2, preferably at least about 1.4.

10. A bone screw as claimed in claim 8, in which the ratio of the diameter of the root of the tail portion to the diameter of the root of the lead portion is not more than about 2.3, preferably not more than about 2.0.

11. A bone screw as claimed in claim 1, in which the value of the thread aspect ratio, defined by the expression:

$$Thread\ aspect\ ratio = \frac{(Overall\ diameter) - (Root\ diameter)}{2 \times (Root\ diameter)}$$

in respect of the thread on the tail portion is greater than that in respect of the thread on the lead portion.

12. A bone screw as claimed in claim 11, in which the ratio of the thread aspect ratio of the thread on the tail portion to the thread aspect ratio of the thread on the lead portion is at least about 1.2, preferably at least about 1.35.

13. A bone screw as claimed in claim 11, in which the ratio of the thread aspect ratio of the thread on the tail portion to the thread aspect ratio of the thread on the lead portion is not more than about 2.2, preferably not more than about 2.0.

14. A bone screw as claimed in claim 1, which has a bore extending through it along its length.

15. A method of screw fixation to a vertebra, which comprises exposing an anterior surface of the vertebra to receive a screw, and inserting a bone screw into the vertebra, via the vertebral body into a pedicle.

16. A method as claimed in claim 15, in which the screw is as claimed in any one of claims 1 to 14.